WHAT IS CLAIMED IS:

1. A multipurpose antibody derivative, comprising the CL and VL domains of a first antibody with a desired first antigen binding specificity, wherein said CH1 and VH domains of the said first antibody interact with said CL and VL domains; and

one or more other molecules having at least one different purpose coupled to one or more of the domains of said first antibody.

2. The multipurpose antibody derivative of Claim 1, wherein said one or more other molecules are selected from the group consisting of: sFv molecules, toxins, enzymes, hormones, cytokines, and signalling molecules.

3. The multipurpose antibody derivative of Claim 1, wherein at least two other molecules having at least one further purpose are coupled to one or more of the domains of said first antibody.

4. The multipurpose antibody derivative of Claim 1, wherein the coupling of one or more of the domains of the first antibody to the other molecule(s) is via a linker.

5. The multipurpose antibody derivative of Claim 4, wherein said linker is an amino acid chain of at least 1amino acid.

6. The multipurpose antibody derivative of Claim 4, wherein said linker is an amino acid chain of at least 3 amino acids.

7. The multipurpose antibody derivative of Claim 1, wherein the other molecule(s) is/are coupled to a moleculule selected from the group consisting of:

the N-terminus of the VH domain of the first antibody;

the C-terminus of the CH1 domain of the first antibody;

the N-terminus of the VL domain of the first antibody;

the C-terminus of the CL domain of the first antibody, and more then one of the above.

8. The multipurpose antibody derivative of Claim 2, wherein said first antibody is directed against human placental alkaline phosphatase (hPLAP) and said sFv consists of the VL and VH domains of the antimurine CD3ε antibody 2C11.

9. The multipurpose antibody derivative of Claim 8, wherein the VL domain of the 2C11 antibody is fused at its C-terminus to the VH domain of the

2C11 antibody via a linker and the VH domain of the 2C11 antibody is fused at its C-terminus to the N-terminus of the VH domain of the E6 antibody, which is fused at its C-terminus to the N-terminus of the CH1 domain of the E6 antibody.

10. The multipurpose antibody derivative of Claim 8, wherein said VH domain of the 2C11 antibody is fused at its N-terminus to the C-terminus of the VL domain of the 2C11 antibody via a linker sequence and said VL domain is fused at its N-terminus to the C-terminus of the CH1 domain of the E6 antibody via a linker sequence.

11. The multipurpose antibody of Claim 8, wherein the VL domain of the 2C11 antibody is fused at its N-terminus to the C-terminus of the VH domain of the 2C11 antibody via a linker sequence and the VH domain is fused at its N-terminus to the C-terminus of the CH1 domain of the E6 antibody via a linker sequence having the amino acid sequence EPSGP $(G_4s)_4M$.

12. A method for the treatment of cancer, infections, parasites, autoimmune diseases, thrombosis, comprising;

administering the multipurpose antibody derivative of Claim 1 in an amount effective for reducing the number of cancer cells, infectious agents, and parasites.

13. A diagnostic kit comprising:

the antibody of Claim 1.

14. A vector encoding the heavy domain containing chains of a multipurpose antibody comprising: suitable transcription and translation regulatory sequences operably linked to sequences encoding the VH and CH1 domains of a first antibody

15. The vector of Claim 14 further comprising, a coding sequence for the other molecule operably linked thereto.

16. The vector of Claim 15, wherein said coding sequence for the other molecule comprises DNA sequences encoding the VL and VH domains of a second antibody, wherein said DNA sequences are operably linked to each other as 5′-VL2L-VH2-3′ or 5′-VH2-VL2-3′.

17. The vector of Claim 15, wherein a linker sequence is incorporated between one or more of the DNA sequences selected from the group consisting of:

VH, CH1, VL2, VH2 coding sequences, and the coding sequence for the other molecule.

18. The vector of Claim 14, wherein said vector is pCA2C11sFvE6Hf deposited under the Belgian Coordinated Collection of Microorganisms accession no. LMBP3715.

19. The vector of Claim 14, wherein said vector is pCAE6HfGS2C11sFv (also identified as pCAE6H2sc2C11H) deposited under the Belgian Coordinated Collection of Microorganisms accession no. LMBP3716.

20. A vector encoding the light domain containing chains of a multipurpose antibody, comprising: suitable transcription and translation regulatory sequences operably linked to sequences encoding the VL and CL domains of a first antibody.

21. The vector of Claim 20 further comprising a coding sequence for the other molecule operably linked thereto.

22. The vector of Claim 21, wherein said coding sequence for the other molecule comprises DNA sequences encoding the VL and VH domains of a second antibody, wherein said DNA sequences are operably linked to each other as 5′-VL2-VH2-3′ or 5′-VH2-VL2-3′.

23. The vector of Claim 21, wherein a linker sequence is incorporated between one or more DNA sequences selected from the group consisting of: VL, CL, VL2 , VH2 coding sequences, and the coding sequence of the other molecule.

24. A set of DNA constructs for producing multipurpose antibody derivatives, comprising the vector of Claim 14 together with a construct encoding at least the light domains VL and CL of a first antibody.

25. A set of DNA constructs for producing multipurpose antibody derivatives, comprising the construct of Claim 20 together with a construct encoding at least the heavy domains VH and CH of a first antibody.

26. The set of Claim 21, comprising vector pCAE6HfGS2C11 and vector pSV51E6L.

27. The set of Claim 21, comprising vector pCa2C11sFvE6Hf and vector pSV51E6L.

28. A host cell comprising the set of Claim 21.

29. A method for producing the multipurpose antibody derivatives of Claim 1 comprising expressing a set of vectors in heterologous host cells.

30. The method of Claim 29, wherein the host cells are selected from the group consisting of: bacteria, fungi, and mammalian cells .

31. The method of Claim 30, wherein the bacterial cells are selected from the group consisting of: actinomycetes, *E. coli*, *Bacillus* spp., *Lactobacillus* spp. and *Lactococcus* spp.

32. The method of Claim 30 wherein said fungi are filamentous fungi or yeast.

33. The method of Claim 30 wherein said mammalian cells are selected from the group consisting of: COS-1 cells, HEK cells, and insect cells.

34. The method of Claim 29 wherein said antibody derivatives are produced in transgenic animals or plants

35. A medicament for the treatment of cancer comprising the multipurpose antibody derivative of Claim 1 in an amount effective to decrease the number of cancer cells.

36. A medicament for the treatment of infections comprising the multipurpose antibody derivative of Claim 1 in an amount effective to reduce the infection.

37. A medicament for the treatment of parasites comprising the multipurpose antibody derivative of Claim 1 in an amount effective to decrease the number of parasites.

38. A medicament for the treatment of autoimmune diseases comprising the multipurpose antibody derivative of Claim 1 in an amount effective to decrease the symptoms of said autoimmune disease.

39. A medicament for the treatment of thrombosis comprising the multipurpose antibody derivative of Claim 1 in an amount effective to decrease the thrombosis.

40. The diagnostic kit of claim 13 wherein said kit is used to diagnose any disease selected from the group consisting of: cancer, infections, parasites, autoimmune diseases, and thrombosis.

41. A multipurpose antibody derivative, obtainable by the specific heterotypic interaction of a chosen VHCH1 combination of immunoglobulin domains, with a chosen VLCL combination of immunoglobulin domains

42. The multipurpose antibody derivative of Claim 41, wherein said domains are extended at either the N- or the C-terminus or both with other molecules, selected from the group consisting of: a toxin polypeptide, an enzyme, a hormone, a cytokine, a signaling molecule, and a single chain linked Fv fragment with the same or a different specificity.

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